

THE BIOLOGIST

VOL. 3 DENVER, COLORADO, FEBRUARY, 1921 No. 1

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THE BIOLOGIST

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**PHI SIGMA HONORARY BIOLOGICAL
SOCIETY**

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THE BIOLOGIST

THE OFFICIAL ORGAN OF THE PHI SIGMA HONORARY
BIOLOGICAL SOCIETY

VOL. 3

DENVER, COLORADO, FEBRUARY, 1921

No. 1

The Past and Future of Phi Sigma.

Emory W. Sink, A. B., M. S., M. D., National President,
Refractionist at University Health Service,
University of Michigan, Ann Arbor, Mich.

It is with a great deal of pleasure that I am able to state a few remarks through the medium of the revived "Biologist". For several years, Phi Sigma has had no official publication, and it is indeed a pleasure to again welcome this small but worthy news letter. Following the period of lessened activity, it is now time for Phi Sigma to set out with a definite determination to rank among the leading National Honorary Scientific Societies. The statement "that the havoc of war has been responsible" sounds a bit monotonous, since we are apt to hear this expression in almost every lecture or public speech. But nevertheless, the fact remains that the war did have much to do with the arrested development of Phi Sigma. However, with its firm and sound foundation, Phi Sigma was able to survive and now is ready to spread its wings and make up for its delayed progress.

At the present writing there are only four chapters which are considered active. These are: Alpha at the Ohio State University, Beta at the University of Michigan, Epsilon at the University of Denver, and Zeta at the University of Wisconsin. Two chapters, one at the University of Maine and the other at the University of North Dakota, became inactive and have not reorganized. To offset this loss, communications have been received from several of the leading institutions regarding charters. It is hoped that at least three new chapters may be added to the list before the school year is over.

One of the changes which has taken place since the last

administration is the adoption of a new constitution. Although defective in a few respects, it possesses a more practical basis and provides several new features, one of which is the establishment of a "Central Governing Body". This body consists of a National President, a National Vice-President, a National Treasurer, and a National Secretary. With this body rests much of the responsibility of providing means of future expansion, the unifying of methods of procedure among the chapters and other details which concern the society as a whole. It is hoped and expected that any member of the society will take advantage of this body and feel free at any time to ask information or send suggestions or criticisms.

It is fitting at this time to make mention of three former members of the society who have exerted unlimited efforts to better Phi Sigma. I refer to the first National President, Prof. C. I. Reed; the second, National President, Prof. Harold Cummins and the present National Treasurer, Mr. Erwine Hall Stewart. I may well say that these members have the society at heart, and were it not for their untiring efforts, the society might never have become a National organization. It is sincerely hoped that other members will take a similar interest in Phi Sigma, for it is only in this way that the future will prove to be as successful as has been the past. The routine procedures concerning the revision of constitutions, the establishing of new chapters, the details of printing, etc., require very careful attention as well as considerable time and patience. And when the burden falls upon a few, the load becomes excessively heavy.

As a final thought, it is the sincere wish of the writer that every member of the society bear in mind that Phi Sigma needs your hearty support and co-operation. May every member be instrumental, even in a small way, in furthering the expansion of the society, its aims and ideals. With this closing suggestion, the National President wishes a successful future not only to the several chapters, but to all the individual members everywhere.

Looking Forward.

Carlos I. Reed, A. B., past National President,
Assistant Professor of Physiology and Hygiene,
University of Kansas, Lawrence, Kansas.

It's a pleasure, after several years of silence, to be privileged to again address the members of Phi Sigma. As one of the founders of Alpha Chapter and having served in the capacity

of President during the earlier periods of growth, I am naturally very anxious to see the complete rehabilitation of the organization and a resumption of its pre-war activities.

Some of the older members have felt that perhaps the Society could never recover from the effects of that trying period. While the disorganization of war days was enough to try the strength of any organization, nevertheless, there should be no faltering. Most other student societies have recovered completely.

I remember well during the days when we were trying to perfect the ground work of a student research organization, there was a suggestion of nationalization. Some laughed at the idea, others said it was idealistic but impractical. But in spite of this, nationalization was accomplished and would have progressed to a far greater degree had not the war stopped progress for a time.

And so I would say to those who are skeptical at the present time that recovery can and shall take place. We may never be able to regain Delta Chapter at Maine. However, I am still hopeful. North Dakota is despaired of. Yet we may still see a live organization that will be a credit to Phi Sigma at this institution. Many of the smaller institutions in the great agricultural states of the Middle West are producing a grade of scholarship that is in no wise inferior to that of the older institutions. They lack only numbers to be able to support a chapter.

How to accomplish all this? First, unity of effort between the Chapters and the National Officers. It should be borne in mind that each individual member is equally responsible with these officers. It is just as much your job, Mr. New-Member, as it is that of the officers. They are giving valuable time uncompensated. Answer promptly their communications. A second request for information is just that much time wasted.

When the original constitution was drafted advice was asked of a great number of prominent persons, officers of Sigma were asked to suggest things that might be avoided. Neither time nor space are sufficient to go into a complete analysis of these things. But in view of the origin of the various provisions made at that time, I would caution the present membership against too hasty *revision* of the constitution. Knowing something of the tendency of student organizations to *revise* whenever personal opinion dictates, I would caution against revision of fundamental provisions until we become stronger and more

stable and our progress is sufficient to warrant a more definite plan of operation.

The next question that occurs to me is the resumption of the publication of THE BIOLOGIST. The only excuse for national organization rests in the possibility of mutual aid among students of different institutions. Furthermore, it is necessary to make plans for more definite communication among the chapters. At present we have only a loose tie, whereas we should have a solidly organized national body.

Another dangerous tendency in any student body is that of devoting undue attention to non-essential technicalities when the real demand is for *constructive and original biological research*.

My vision for the future of Phi Sigma is a society in which there is an active exchange of communications among the chapters, on biological questions, assistance on research problems, and the securing of financial aid to deserving workers. This last might be carried out by means of a request from the Central Governing Body to the National Research Council. But to secure this aid we must be able to show a live, active, functioning body composed of representative workers in biological science in a great number of institutions. The possibility of the consummation of such a scheme might be an attraction for other bodies to petition for membership.

It will be necessary to lay plans for a national convention in the near future. We must, then, be ready to sacrifice money, personal ambitions in the society, and all other individual factors in order to accomplish the larger good.

In the national officers, then, I would urge faith in the larger vision of Phi Sigma; and in the officers and members of the chapters, ever firm support and co-operation. May the coming year be the best yet for Phi Sigma and may we never reach the limit of our desires, hopes, and dreams of future progress and accomplishment.

The Present.

Erwine Hall Stewart, A. B., A. M., National Treasurer.

At this time I wish to thank those who have assisted me in any way in getting out this issue of THE BIOLOGIST and to those who were tardy in supplying the information asked for, the request that they try to be on time for the next one.

Co-operation between the active chapters and the members of the Central Governing Body is the thing that is most needed at this time.

This issue of THE BIOLOGIST has been made possible only through the donations of certain alumni members of the society and it is our intention to place a copy in the hands of every member of the society, both active and alumni, regardless as to whether or not he has paid a subscription, provided we can obtain an address that will reach him. However, if the publication is to be kept up an effort must be made either to obtain a subscription list or the active chapters must make some additional means available to support it. If any fair number of the membership would pay up subscription it will easily make it possible to get out an issue quarterly as was originally planned and as was done for a time before the war. It has not been possible for me to obtain some important news items that should have been published in this issue without more co-operation from other members of the society than I have had. It was not our intention to publish a scientific publication but merely a news letter to keep the chapters and members in touch with each other and we feel that such a publication is greatly needed at all times by the society.

The society is greatly indebted to Dr. Sink for the time and effort that he has given it, for he took up his office as National President at a time, when, due largely to the war, the affairs of the organization were at a very low ebb and he has carried us through what I hope has been the most trying period of history we will ever have. Due to the fact that the Central Governing Body is forced to carry on the greater part of its business by mail, it requires a great deal of time to keep up the correspondence in connection with it.

It has been suggested that we publish a directory of the society, giving the name, address, occupation, subject of research, etc., of each member. I think the idea a good one and if all the chapters will assist I will undertake the job and if there are any alumni who are able and willing to contribute to the cost we can get it done before a great while. Had the chapters responded in giving me alumni items or personals as I asked for there would have been something along that line in this issue more than what there is.

Many of the members of the society have been publishing articles in the various journals, but I have not been able to take the time to run them all down, consequently there are very few

abstracts in this issue. When any of you have spare time it would assist to have some of this work done.

If you alumni will take the matter a bit to heart and pay up your subscriptions without someone having to write to you and ask you for it, and if you will send in your addresses and tell us what you are doing and all that you know about the activities of other members of the society, there will not be any further trouble as to the regularity or quality of the contents of future issues of THE BIOLOGIST.

Alpha Chapter.

Alpha was hard hit by the war, but, with the returning of normal conditions, she is returning to her own and "came to" with considerable life during the last year and we are expecting to see more signs of improvement in the near future. With such men as Wiltberger and Waller still at Ohio State there is no reason for Alpha not soon being the leading as well as the first chapter of the society as she has been in the past.

Beta Chapter.

Since its installation in June, 1916, Beta Chapter has initiated a total of one hundred and thirty-six members of all ranks. These members have been chosen from the following departments of the University: Botany, Paleontology, Psychology, Zoology, Chemistry, Bacteriology, Forestry, Medicine, Pharmacy and two honorary members from the department of Philosophy.

At the present time we have a total resident membership of seventy-two, forty-three being active members, eight alumni, four honorary, and seventeen faculty, distributed by departments as follows: Medicine, thirty; Zoology, fifteen; Botany, fourteen; Forestry, four; Paleontology, two; Psychology, two; Philosophy, two; Chemistry, one; Bacteriology, one; Pharmacy, one.

The chapter strives to schedule a meeting every two weeks, at which a paper is read or some topic of interest is discussed by one of the active or faculty members. At one of the meetings a member related some of his experiences while doing hospital service in France during the recent war. At another meeting a paper on the Philosophy of Biology was read and at another meeting one of the faculty members spoke on Water Absorption by Protoplasm, etc.

The chapter holds two elections of members and initiation

banquets a year and at the December election we elected seven active and six faculty members.

The problems facing our organization are the same as those facing practically every other organization on the campus. The meetings of the various societies are as numerous as the evenings in the week, and each one calls alike upon its members for enthusiasm and support. The problem of our society is to make itself, first of all, a vital factor in the experience of its members, and second, to make itself felt throughout the University as a whole. The second problem is well solved, for we have a place on the campus of which none of us need feel ashamed, but the first part of the problem is not so easy.

MELVILLE H. HATCH,
Corresponding Secretary.

Delta Chapter.

Before the recent war Delta was one of the most promising chapters of the society, but as conditions brought about by the war so altered the enrollment at the University of Maine that up to the present time it has not been considered best to revive the chapter, but the influence of the chapter still lives, as it has brought about the formation of an active biological organization which makes provision for the sophomore class, which is very important at that institution, as most of them leave at the end of the sophomore year to enter medical school. The situation is not being neglected and whenever it seems suitable an effort will be made to revive the chapter.

Epsilon Chapter.

The position of Epsilon is closely akin to that of Delta, but not nearly so depressed, for the chapter did not entirely suspend activity even during the war period and with the return of normal pre-war conditions is regaining its former position.

Dr. E. B. Renaud, one of the faculty members, has been doing some very fine original work in Archeology and Ethnology at the Mesa Verde and among the ruins of the Cliff Dwellings in the southwest, as he has spent considerable time in field work the last two seasons.

The alumni of the chapter are rather widely scattered and many of them are doing good work and are keeping up the reputation of the society, and no doubt but some of them will be very helpful in establishing new chapters in the future.

The chapter is fostering a biological organization at the University, which is open to nearly all students of the department and they all understand that election to membership in Phi Sigma is a real mark of honor as well as a call for higher service.

Zeta Chapter.

Zeta Chapter is the only chapter reporting the loss of a member in the service during the late war. If there are others among the other chapters we would like to have them reported, also their names, etc.

The active membership of Zeta Chapter at present is eighteen; however there still are several alumni of the chapter in residence at Madison, which brings the attendance at meetings up to twenty-five, which is quite ample for good meetings and life in the Chapter.

Expansion.

The voting on the petition of the Axis Society at the University of Akron has been favorable and it will shortly be installed as the Eta Chapter of Phi Sigma.

At the present writing a petition from the Graduate Research Club at the Michigan Agricultural College is being circulated, and as there is no question as to the standing of the institution and the petition speaks well for the personnel of the organization, we hope the voting will be favorable on this petition also.

Several communications have been received by the Central Governing Body during the last year from institutions in different parts of the country looking towards the establishment of chapters at these places. Several of these we trust will result in chapters being formed, but in this connection let it be fully understood that while Phi Sigma is willing to and wishes to expand and do all in its power to aid and foster the advancement of the Biological Science, still it does not wish to enter institutions that are not able to support an active chapter.

The Minimum Concentration of Dichlorethylsulphide (Mustard Gas) Effective for the Eyes of Man.

C. I. Reed

From the Pharmacological Research Section, Medical Division,
Chemical Warfare Service, United States Army, American
University Experiment Station Laboratories.

Received for publication December 8, 1919.

Numerous investigations have been reported upon various phases of the subject of dichlorethylsulphide (mustard gas) poisoning since the use of this substance in warfare was begun (1). It is well known that "mustard gas" is an extremely toxic substance and that minute amounts produce effects upon the skin (2). The experiments reported in this brief note demonstrate its extremely toxic effects upon the eyes and records the symptoms of unprotected men exposed to very dilute but definitely determined concentrations.

The purpose of the investigation was to determine the minimum concentration of mustard gas that would produce effects in an unprotected man. A summary of toxicity experiments on animals leads to the assumption that an exposure to a concentration of 0.008 mgm. per liter of air for eight hours may prove fatal to animals. The smallest amount that will affect the human skin depends on the sensitivity of the individual (2). The skin of a sensitive man shows a slight erythema from thirty to sixty minutes exposure to 0.0025 to 0.005 mgm. per liter. The eyes are undoubtedly more sensitive than the skin. Dogs show a definite conjunctivitis from two hours' exposure to 0.001 mgm. per liter but not from one hour.

From the above results it may be reasonably concluded that a prolonged exposure to 0.001 mgm. will certainly incapacitate a man. It appears that this concentration will not seriously affect a man in one to two hours but might incapacitate him after more prolonged exposure (eight to ten hours).

First the author undertook an exposure of himself from which only slight effects were expected. But owing to the much greater sensitivity of the eyes of man than of any ordinary laboratory animals the results were more severe than expected.

The subject was exposed to a concentration of 12 mgm. in 10,000 liters of air (1 part in 5,000,000) in a closed chamber for

forty-five minutes. There were no symptoms of note during the exposure, nor for several hours after, but at the end of twelve hours severe blepharospasm and photophobia, profuse lachrymation and pronounced rhinitis had developed. A severe conjunctival injection occurred which persisted for about six days in a severe degree and was still noticeable a month later. The subjective symptoms in connection with the eyes persisted for three months but finally disappeared entirely and have caused no further difficulty. No pulmonary symptoms were present at any time during the experiment or afterwards, that could be certainly assigned to this experience.

Cutaneous symptoms were not pronounced for two days, but finally resulted in complete exfoliation over the trunk above the waist line and over the face. There was also considerable exfoliation of the mucous membrane in the naso-pharynx.

Other subjective symptoms were pain and tenderness of the areas about the eyes, nose and mouth which persisted for two weeks, and a compelling, torturing itch over the trunk which was aggravated by exercise and was sufficient to incapacitate the subject for any activity for a period of ten days. To a limited degree this condition has recurred as much as a year later at various intervals, being more severe in hot weather. The character of the sensation is such as to be unmistakably recognized after having been once experienced.

This experiment is reported in detail, as it is probably one of the few in which exposure of man to a definitely known concentration of "mustard gas" was carried out.

After the author's experience a series of experiments on human subjects was undertaken in an effort to more definitely determine the effective concentration. The concentration was either lower than that employed by the author or exposure was continued for a shorter period of time. Exposures were made in a 10,000 liter gas chamber into which calculated concentrations were sprayed from a fresh solution of "mustard gas." Since some hydrolysis takes place under these conditions, samples were aspirated from the chamber at intervals for analysis by the method recently described by Hopkins (3), so that the actual concentration was accurately determined in each case.

Thirteen subjects were exposed, on all of whom the skin sensitivity had been previously determined by the methods described by Marshall, Lynch and Smith (2). According to the degree of susceptibility, the subjects were grouped so that the more sensitive individuals were exposed for shorter periods in

order that no more than initial effects would be produced upon the skin and eyes.

Each man wore a respirator canister and nose clip to protect the respiratory system and one eye was protected for a control by means of half of a close fitting rubber-rimmed goggle, the other eye being exposed for observation of effects on the conjunctiva. The tabulated results follow.

No. Exposed	Concentration Per Liter		Time of Exposure	No. Showing Conjunctivitis
	Calculated	By Analysis		
	mgm.	mgm.	min.	
2	0.0011	0.00048	10	2
3	0.0011	0.00047	20	1
2	0.0011	0.00048	25	1
2	0.0011	0.00058	10	2
2	0.0011	0.00055	20	0
2	0.0011	0.00058	20	2

Of the thirteen subjects, eight showed definite conjunctivitis in the unprotected eye, accompanied by varying subjective symptoms. Three of these suffered skin effects of sufficient severity to cause the appearance of a diffuse erythema with itching, both symptoms persisting several days. One of the three was unable to detect the odor of mustard upon removing the nose clip when first entering the chamber. None reported any subjective symptoms at any time during the exposures.

The effects observed were of a sufficient degree of severity to make it apparent that an exposure of any of the subjects who showed reactions, for double the time, would probably incapacitate him.

CONCLUSIONS

The eyes of man are the most sensitive structures to exposures to "mustard gas."

Concentrations of "mustard gas" of 0.0005 mgm. per liter of air (1 part in 10,000,000), will produce visible reactions in less than one hour of exposure of individuals whose cutaneous resistance is relatively high.

REFERENCES

- (1) Lynch, Smith and Marshall: J. Pharm. and Ex. Ther., xii., 265, 1918. Warthin, et al: Jour. Lab. and Clin. Med., iii and iv, 1918, 1919.

- (2) Marshall, Lynch and Smith: J. Pharm. and Ex. Ther., xii, 291, 1918.
(3) Hopkins: J. Pharm. and Ex. Ther., xii, 393, 1918.

EDITOR'S NOTE.—In connection with the above article we wish to state that as late as the present time (January, 1921) Mr. Reed is still suffering from the effects of the exposures he made on himself during these experiments.

Ritual

At the present time the revised ritual is in the hands of the printer and had there not been some delay it would have been off the press at this writing.

In making the revision the committee has taken the various rituals that have been in use into consideration and think that they have produced a version that will be both practical and distinctive for the society.

Keys

As all the active members know the service of Mr. Albaugh, the former official jeweler of the society, has been very unsatisfactory from every standpoint, with the result that the Central Governing Body took up the matter and has now made arrangements with one of the leading fraternity jewelers of the country, whereby the keys may now be had at \$5.00 each instead of the varying price that Mr. Albaugh managed to shift every time between orders.

In the future all orders should be sent to the national treasurer, who will place them with the jeweler. After the first order we are promised delivery within 48 hours after the order is placed, as the jeweler will carry the keys in stock and for the first order they are promised in about two weeks. In view of the delay we have been having it will be much better.

If swivel top keys are wanted they can be supplied for \$5.50.

When ordering be sure to give full names and year, date of initiation so that the engraving may be done properly.

Directory

CENTRAL GOVERNING BODY

President, DR. EMORY W. SINK, 1113 Willard St., Ann Arbor, Michigan
Vice-President, C. N. FREY Mellon Institute, Pittsburgh, Pa.
Secretary, JOHN E. LUDWICK 109 Glen Ave., Ann Arbor, Michigan
Treasurer, ERWINE HALL STEWART Mesa, Colorado

PUBLICATION

The Biologist Editor, ERWINE HALL STEWART Mesa, Colorado

ALPHA CHAPTER

Ohio State University.....	Columbus, Ohio
President, P. B. WILTBERGER	1831 North 4th Ave., Columbus, Ohio
Secretary, A. E. WALLER	Ohio State University, Columbus, Ohio

BETA CHAPTER

University of Michigan.....	Ann Arbor, Michigan
President, JOHN VAN OOSTEN,	420 South 5th St., Ann Arbor, Michigan
Vice-President, RUSSELL HUSSEY,	1219 Golden Ave., Ann Arbor, Mich.
Sec.-Treas., DOW V. BAXTER,	1014 Cornwell Place, Ann Arbor, Mich.
Cor.-Sec., MELVILLE H. HATCH,	1014 Cornwell Place, Ann Arbor, Mich.

DELTA CHAPTER

University of Maine.....	Orono, Maine
PROF. M. A. CHRYSLER, Faculty Member	Orono, Maine

EPSILON CHAPTER

University of Denver.....	Denver, Colorado
President, GEORGE A. DALE	501 Marion St., Denver, Colorado
Secretary, OWEN P. CUTLER,	2122 South Clayton St., Denver, Colorado

ZETA CHAPTER

University of Wisconsin.....	Madison, Wisconsin
President, H. W. ALBERTZ	Madison, Wisconsin
V.-Pres., JOHN MONTEITH, JR.,	2220 West Lawn Ave., Madison, Wis.
Sec., H. W. RICKETT, Biology Bldg. Univ. of Wis.,	Madison, Wisconsin
Treasurer, JAY L. LUSH	Madison, Wisconsin

Recent Contributions

Chronic Poisoning from Hydrocyanic Acid by C. I. Reed.
A. from the Journal of Laboratory and Clinical Medicine,
St. Louis, Vol. 5, No. 8, May, 1920.

Chronic Poisoning from Cyanogen Chloride by C. I. Reed.
A. from the Journal of Industrial Hygiene, Vol. 2, No. 4,
August, 1920.

The Mechanism of The Toxic Action of Cyanogen Chloride
by C. I. Reed, A. from The Journal of Pharmacology and Ex-
perimental Therapeutics, Vol. 15, No. 4, June, 1920.

Why is Poor Ventilation Harmful? by C. I. Reed. A.
from American Journal of Public Health, Vol. 9, No. 9, Septem-
ber, 1919.

Alumni Notes

Mr. Reed, A. is now Assistant Professor of Physiology and
Hygiene at the University of Kansas, Lawrence, Kansas.

Mr. Cummins B. is still on the faculty at Vanderbilt Uni-
versity, Nashville, Tennessee.

Dr. John W. Amessee E., since returning from the army, where he was a Lieutenant-Colonel in the medical corps, seeing service in France and England, has resumed his large practice with children, on whom he has specialized for years with marked success.

Stuart L. Sweet E., after having been in charge of the Colorado Bureau of Markets during the war, has recently resigned from that position and taken up live-stock raising on the famous Sweet brothers ranch at Carbondale, Colorado. This ranch, as well as the Roaring Fork Valley, having been the prize potato growing spot in Colorado for many years.

Mr. P. A. Munz E., is now Professor of Botany at Pomona College, Claremont, California.

Mr. Humphrey G. Owen E., is the Assistant Professor of Biology at the University of Montana, Missoula, Montana.

Lewis H. Mahoney E. has taken up dry farming near Eaton, Colorado.

Clare A. Stewart E. has taken up dry farming and the raising of pure blooded cattle near Wiggins, Colorado.

Wayne N. Aspinall E. is engaged in fruit raising at Palisades, Colorado.

Carl L. Wilson E. is doing graduate work at Cornell University.

Mereld C. Jobe E. has entered the medical school at Harvard University.

Mr. Claude Kellogg E. is on the faculty of the Anglo-Chinese College at Foo-Chou, China.

Mr. Franklin E. C. Williams E. is teaching in the high school at Kong Ju, Korea.

Mr. Paul W. Hipp E. is in the employ of the Great Western Sugar Co. at Longmont, Colorado.

Zeta Chapter Report. (Received Late).

During this semester, no new members have been initiated into Zeta Chapter, and as a number of our older members left last year, the active membership is at present rather small. A large number of names have, however, been proposed for membership, and these will be voted upon in the near future.

The list of active members follows:

Department of Plant Pathology: J. Montieth, Jr. (Vice-President); J. Godkin, J. Gray, G. F. Weber, A. C. Foster, J. G. Dickson.

Department of Genetics: J. L. Lush (Treasurer); J. J. Yoke, G. N. Stroman.

Department of Agronomy: H. W. Albertz (President).

Department of Zoology: L. E. Noland, G. F. Forster, A. A. Boyden.

Department of Botany: H. W. Rickett (Secretary).

Department of Horticulture: N. T. Nelson, R. H. Roberts.

Department of Agricultural Bacteriology: J. A. Anderson.

Department of Agricultural Chemistry: O. R. Brunkow.

Department of Soils: O. C. Bryan.

We have four Alumni members, still resident in Madison: J. W. Brann, S. P. Doolittle, W. B. Tisdale, and J. C. Walker. These men are all workers in Plant Pathology, and are now either working for the U. S. Department of Agriculture or for the University.

The Chapter has three Honorary Members: Professor L. R. Jones, Plant Pathology; Professor E. M. Gilbert, Botany, and Professor A. S. Pearse, Zoology.

Seven of our old members obtained their Doctor's degree last spring or summer. They are as follows: In Botany, H. W. Browning, C. N. Frey and E. H. Toole; in Zoology, R. L. Abbot, Bert Cunningham and A. E. Cole; in Plant Pathology, W. B. Tisdale. With the exception of the latter, they have all left the city. Browning is Professor of Botany at Rhode Island State College. Frey is engaged in research at the Mellon Institute in Pittsburgh. Toole is in Washington in the Department of Agriculture. Abbot is Professor of Zoology at Iowa State Teachers' College. Cole is Instructor in Zoology in North-

western University. Cunningham is Professor of Zoology at Trinity College, Durham, N. C.

W. H. Tisdale, who was with us for a short time this year, was recently appointed to head the work of investigation of smut of cereals in the Department of Agriculture.

Among other members who have left the city are W. W. Yapp, who is now Professor of Animal Husbandry at the University of Illinois; C. G. Welles, who is Assistant in Plant Pathology in the University of the Phillipines; P. A. Harvey and R. A. Nesbit, both of whom have left school for a time.

Of the charter members, and those who were initiated soon after the foundation of this Chapter, W. M. Gibbs is now Professor of Bacteriology in the University of Idaho; C. M. Woodworth is Professor of Agronomy in the University of Illinois; G. M. Armstrong is at the Missouri Botanical Garden; J. P. Bennett is Professor of Horticulture at the University of California; J. N. Lowe is Professor of Zoology at Marquette Normal, Marquette, Mich.; H. L. Fulmer is in business in South Carolina; M. W. Gardner is Assistant Plant Pathologist at Purdue, Ind.; M. T. Binney is Seed Specialist with the Albert Dickenson Seed Co., Chicago; N. J. Giddings is Pathologist at the West Virginia Agricultural Experiment Station; M. C. Gugler is in business at Woodbine, Kansas; C. B. Clevenger is a chemist at Toronto, Canada; W. H. Snell is Pathologist at Brown University, Providence, R. I.

One of our members, Eugene W. Roark, died of the "flu" during the war.

During the present semester the Chapter has had a number of interesting meetings, although some of them had to be abandoned because of unexpected conflicts with Sigma Xi. We have had the good fortune of listening to Dr. E. B. Fred, of the Department of Agricultural Bacteriology; Dr. H. C. Bradley, of the Department of Physiological Chemistry, and Dr. E. J. Kraus, of the Department of Botany; each of whom gave a very interesting talk. A large number of members, both active and alumni, turned out to these meetings, and there were also many guests present. During the coming semester, we hope to hear from other members of our faculty who have distinguished themselves in the scientific world, and we are also scheduling some talks by our own active members, as was done last year, in order to promote mutual interest in and understanding of one another's problems and fields of study.